Izuka Ikedionwu

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EDUCATION

Master of Science in Electrical & Computer Engineering | 2026 | Baylor University
Bachelor of Science in Electrical & Computer Engineering | 2025 | Baylor University
Minors: Computer Science and Mathematics

EXPERIENCE

SPACEX — Spring & Summer 2024

Starlink Hardware Design Engineer | Instrumentation & Control Systems Engineer

- Led $4 million cost savings project designing antenna TX/RX transient stability, output ripple, and control loop stability, and efficiency over temperature range for various voltage regulators powering modem SOC
- Integrated next-gen DDR4 and eMMC (Flash Memory) modules into embedded phased array antenna hardware system
- Reduced rocket booster transportation time by 66% by integrating motor control and sensor electronics with LabVIEW GUI streamlining data acquisition and monitoring
- Managed $8k industrial panel box project designing and installing DIN rail modules and used CAD for steel battery holder
- Performed root cause failure analysis on GNSS boot time problems, optimizing antenna test setups using Linux/bash, microcontrollers, automated lab equipment, and networking hardware for system reliability
- Shipped software that tested and validated 300 pressure sensor interface circuits and power supply modules for critical rocket engine tests

BAYLOR LIQUID ROCKET ENGINE TEAM — Spring 2023-Spring 2025

Lead Electrical Engineer

- Led a 4-person team from concept to testing of software, electronics, and instrumentation for 2 liquid rocket engines
- Developed electronics stack and performed characterization with 7 sensor modules, mixed-signal interfaces, actuator drivers, and power electronics for rocket engine testing
- Built 7.2V-5V battery and 8 channel signal generator modules for automated Hardware-In-The-Loop testing
- Wrote C++ and Python code for Wi-Fi, BLE, ADCs, DACs, EEPROM, UART, and SPI in Linux and Bare-Metal Systems

LOCKHEED MARTIN-SPACE — Summer 2023

Embedded Systems Engineer

- Implemented multi-FPGA SERDES RTL up to 1.4 GHz for high-reliability space telemetry applications
- Prototyped multi-FPGA benchtop testing in Python and SystemVerilog to validate design, integrating oscilloscope, spectrum analyzer, power supply, multimeter, and signal generator control

NON-VON, LLC (Dartmouth University Research AI Inference Start-Up) — Summer 2025

Edge Systems Hardware Engineer

- Redesigned schematic and layout of microcontroller-to-M.2 interface PCB, reducing footprint by 20%
- Delivered schematic and layout of high-speed I/O PCB interfacing HDMI, Ethernet, USB, and memory for sensor system
- Increased FPGA based AI inference capabilities redesigning schematic and layout of PCB power delivery network (PDN)

BAYLOR UNIVERSITY — Summer 2025 - Present

Graduate Research Engineer

- Designing wide band-gap synchronous front-end AC/DC converter utilizing SiC technology to reduce EMI for MIL-STD-461G standards for electric submarine applications
- Implemented hardware-in-the-loop testing on FPGA-based simulator for AC/DC and DC/AC controller algorithm validation

SKILLS

Software:

- C/C++, Python, SystemVerilog, ADS, FreeRTOS, MATLAB, Linux, Altium, KiCad, Git, NuSMV, Vivado, NX Siemens

Communication Protocols:

- SPI, I2C, Ethernet, DDRX, SERDES, UART, CANBus, USB, JTAG, SDIO, LVDS

Tools:

- Oscilloscope, Spectrum Analyzer, Vector Network Analyzer, Soldering Iron, Logic Analyzer, Signal Generator, E-Load